BUILDING 923/937 AREA SITE-SPECIFIC ADDENDUM TO THE PRESIDIO TRUST LAND USE CONTROLS MASTER REFERENCE REPORT

PRESIDIO OF SAN FRANCISCO, CALIFORNIA

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1. INTRODUCTION

The California Environmental Protection Agency, Department of Toxic Substances Control ("DTSC") requires sites that do not fully meet the most stringent Presidiospecific human health cleanup levels (i.e., residential cleanup levels) to have land use controls to inform and protect future users. This Site-Specific Addendum has been prepared for the Building 923/937 Area as an addendum to the Presidio Trust Land Use Control Master Reference Report ("LUCMRR") because certain areas within the Building 923/937 Area do not meet Presidio-specific residential cleanup levels for chemical concentrations in soil and groundwater. In addition, some residual chemical concentrations in this area also exceed recreational cleanup levels. The Presidio-specific cleanup levels are presented in the Presidio-wide Cleanup Level Document (EKI, 2002). Land use plans, which govern all future use of the Presidio, designate the Building 923/937 Area for recreational human land use and buffer zone ecological land use (NPS, 1994; Trust 2002; EKI 2002). This Site-Specific Addendum for the Building 923/937 Area identifies the restricted areas, the chemicals of concern ("COCs") that exceed residential and other cleanup levels, and the specific land use restrictions in different subareas. Note that both this Site-Specific Addendum and the LUCMRR only apply to Area B of the Presidio, and does not apply to Area A. There is no known soil contamination in Area A which exceeds residential (unrestricted) cleanup levels and no soil land use controls are required.

2. BUILDINGS AND AREAS INCLUDED IN THE LAND USE CONTROL

The specific buildings and areas addressed in this addendum include former and existing Buildings 923, 924, 925, 926, 927, 929, 930, 931, 933, 934, 935, 937, 942, 944, and 965 and the area immediately around these buildings. Figure 1 shows the locations of these buildings and the land use control ("LUC") area. The *Crissy Field Remedial Action Plan* ("Crissy Field RAP") (Army and DTSC, 1998) identified several of these buildings and immediately surrounding area as "Sites" for purposes of defining areas that may require environmental investigation or remediation. Specifically, the Crissy Field RAP differentiated between the Building 923/937 Area and the Building 937 Area. For purposes of this addendum, all components of these two Areas within Area B are considered to be included within the Building 923/937 LUC Area. This LUC applies only to locations in the Building 923/937 Area that are within Area B. The specific sites

¹ The Crissy Field RAP site, Building 924 Firing Range, is also located within the footprint of the Building 923/937 LUC Area, although residual concentrations of COCs in soil at the Building 924 Firing Range are less than residential cleanup levels.

within the Building 923/937 LUC Area are listed in Table 1 (Section 3.2) and shown on Figure 1.

In addition, the Crissy Field RAP identified the groundwater impacts at Building 937 Area and gave this site the specific name of the Building 923/937 Area (Groundwater). For purposes of this document, the area will be called the Building 937 Groundwater Area. Due to the fact that residual concentrations of petroleum hydrocarbons and related constituents have been detected above drinking water maximum contaminant levels ("MCLs"), a groundwater use restriction has been imposed in this area as shown on Figure 2.

3. REMEDIATION SUMMARY AND REMAINING CHEMICALS OF CONCERN

This section describes remedial actions implemented and identifies the COCs detected at concentrations above the human health residential cleanup levels² at the various sites within the LUC area. A more detailed summary of remedial actions and remaining chemical concentrations for all of the Crissy Field RAP sites is provided in the *Crissy Field Implementation Report* (EKI, 2004c).³

3.1 Site History

The Building 923/937 Area was one of the Army's most industrialized sites within the Presidio. The Area was used for aircraft and vehicle maintenance, auto bodywork, recharging and draining batteries, solvent storage, transformer storage, painting, waste oil storage, fuel storage, and other activities involving the use of hazardous materials.

In 1981, during the installation of a hydraulic lift (Tank 937.H), petroleum hydrocarbons were reportedly observed in soil. Between 1982 and 1984, the Army installed 22 groundwater monitoring wells in the vicinity of Building 937. Free product was identified in wells closest to the Building 937 tanks, with measured thickness ranging between 6 and 36 inches.

² The Building 923/937 Area is zoned for commercial and recreational use and therefore recreational human health cleanup levels apply. However, as stated in the LUCMRR, LUCs are applicable at locations where residential (the most restrictive human health) cleanup levels are not achieved.

³ At the time of this writing, the Trust is conducting an investigation to assess the distribution of volatile organic chemicals ("VOCs") in soil, soil gas, and groundwater below Building 937 due to the detection of VOCs in the subslab vapor. The results of this investigation will be summarized in a forthcoming investigation report. This LUCMRR Addendum will be updated to incorporate the findings of the investigation.

In May 1991, the RWQCB issued Order 91-082 ("1991 Order") to the Army. The 1991 Order required further investigation and remediation of the Building 937 Area. The investigation, cleanup, and monitoring requirements of the 1991 Order with respect to Building 937 were incorporated into the Crissy Field RAP. The Army implemented the cleanup in the 923/937Area from 1992 to 1999.

In 1992, the Army performed an Interim Remedial Action ("IRA"), which included removal of the tanks (937.1 and 937.2), excavation of approximately 500 cubic yards of impacted soil, and the installation of three additional groundwater monitoring wells in the Building 937 area. Between 1994 and 1998, the Army expanded the groundwater monitoring well network and operated a vacuum vaporization system (Unterdruck Verdampfer Brunnen ("UVB") system) to remove volatile organic compounds from the groundwater. This system was removed in 1998.

In 1998, the Army excavated soil from 2 locations on the north side of Building 937: at the northwest corner of Building 937 and in the northeast corner, adjacent to and within the footprint of the 1992 excavation. Chemical concentrations in the verification soil samples were less than the applicable cleanup levels, except for those samples located adjacent to the northeast corner of Building 937. The UST excavation area was backfilled with low temperature thermal desorption ("LTTD") treated soil to a depth of approximately 1.5 feet below ground surface. The remaining portion of the excavation was filled with imported topsoil. The location of LTTD soil is being tracked under the Trust's LTTD Soil Management Plan (EKI, 2004a) and the LUCMRR. Locations within the Building 923/937 Area with LTTD-treated soil are shown on Figure 1.

Separate from the work at the northeast corner of Building 937, the Building 923/937 Area included four additional excavation areas: (1) northwest corner of Building 937; (2) south of Building 937; (3) a strip along the western side of Buildings 924 through 933; and (4) the courtyard bounded by Buildings 933, 934, and 935. In 1998, the Army excavated 1,386 tons of soil from the excavation areas 1 through 4 and disposed of the soil as non-RCRA hazardous waste at a permitted, off-site facility. The Army collected and analyzed excavation sidewall and bottom verification soil samples from these excavations. Chemical concentrations in the verification soil samples were less than the applicable cleanup levels with a limited number of exceptions. The Army backfilled the excavations to original grade with imported soil.

As for the groundwater at the site, the Army decommissioned 38 monitoring wells in 1998 to facilitate the restoration activities at Crissy Field. The remaining monitoring wells were sampled regularly by the Army and subsequently by the Trust until the Trust installed a network of 18 replacement monitoring wells in 2001 and 2002. The Trust has

been performing quarterly monitoring of groundwater in the Building 923/937 Area since August 2001. The objective of the monitoring is to confirm that source removal actions at Building 937 were effective at reducing chemical concentrations below cleanup levels that are protective of saltwater aquatic life in San Francisco Bay. Most of these wells are located downgradient of Building 937, in Area A. Only one well, 937GW108, which is located at the former Building 937 source area, is within the Building 937 Groundwater Area.

Lastly, the Trust has recently performed sampling for lead around many of the buildings in the Building 923/937 Area (i.e., lead-based paint in soil). Lead was detected in shallow soil at concentrations greater than 500 mg/kg, which exceeds the recreational cleanup level for lead.

3.2 Residual Chemicals Above Residential Cleanup Levels

Table 1 below summarizes COCs remaining in soil or groundwater above residential cleanup levels at particular sites after remedial actions were conducted.

TABLE 1 SITES INCLUDED IN THE BUILDING 923/937 AREA LAND USE CONTROL AREA

Location	COCs Detected above Residential			
	Cleanup Levels			
Crissy Field RAP Remediation Areas				
Building 937 (soil)	Acetone, arsenic, benzene, benzo(a)pyrene,			
	ethylbenzene, methylene chloride, lead, total			
	petroleum hydrocarbons ("TPH") as gasoline, TPH			
	diesel, TPH fuel oil, and xylenes. (a)			
Building 923/937 Area (soil), excluding	Cadmium and lead (b)			
Building 937				
_				
Building 924 Firing Range	None (c)			
Building 923/937 Area (groundwater), at	Benzene, TPH gasoline, TPH diesel, and TPH fuel			
Building 937 and within Area B north of	oil			
Building 937				
Petroleum Tank Sites				
Tank 923 (Solvent)	None			
• Tank 924.1 (Bulk oil)	None			
Tank 924.2 (Waste oil)	None			
Tank 926.1 (Gasoline)	None			
Tank 926.2 (Gasoline)	None			

TABLE 1 SITES INCLUDED IN THE BUILDING 923/937 AREA LAND USE CONTROL AREA

Location	COCs Detected above Residential			
	Cleanup Levels			
Tank 926.3 (Gasoline)	None			
Tank 926.4 (Gasoline)	None			
Tank 926.5 (Gasoline)	None			
Tank 930.1 (Hydraulic oil)	None			
Tank 930.2 (Hydraulic oil)	None			
Tank 931 (Oil/water mix)	None			
Tank 934 (Unknown)	None			
• Tank 937.1 (Waste oil)	Acetone, benzene, ethylbenzene, methylene chloride, TPH gasoline, TPH diesel, TPH fuel oil, and xylenes			
• Tank 937.2 (Xylenes)	Acetone, benzene, ethylbenzene, methylene chloride, TPH gasoline, TPH diesel, TPH fuel oil, and xylenes			
Tank 937.H (Hydraulic oil)	None			
Historical Records Review Sites within				
Crissy Field:				
Former Building 922	None			
Former Building 928	None			
Former Old Building 942	None			
Building 942	None			

Table Notes:

- (a) Benzene, tetrachloroethene ("PCE"), and trichloroethene ("TCE") were detected in subslab vapor samples at Building 937 in December 2005 and July 2006. At the time of this writing, the Trust is preparing a report of an investigation of the soil, soil gas, and groundwater below Buildings 937 and 933 conducted in late 2005 and 2006.
- (b) Lead from lead-based paint has been detected in shallow soil around many of the buildings in the Building 923/937 Area.
- (c) Sites marked "None" do not have known detections of chemicals of concern above Presidiospecific residential cleanup levels. However, due to the general long-term industrial use of the area and the presence of lead in soil around the buildings, the Trust has included these sites in the Building 923/937 LUC Area.

If data are collected in the future for all or a portion of the Building 923/937 LUC Area that demonstrates chemical concentrations are less than residential cleanup levels, the Trust can request and recommend to the DTSC that the LUC be removed.

4. SITE-SPECIFIC LAND USE RESTRICTIONS

Land use restrictions at Building 923/937 Area have been divided into two zones: (1) the Building 937 Area Land Use Control Area and (2) the Building 923/935 Land Use Control Area in order to identify pertinent restrictions considering the chemicals detected in each zone. These areas are shown on Figure 1. The Building 937 Land Use Control Area is part of the Building 923/937 Area, and is separately designated to provide LUCs to address the potential indoor air quality issues within Building 937 and the presence of LTTD-treated soil. The Building 923/935 Land Use Control Area does not have the LUCs associated with indoor air quality or LTTD-treated soil. The specific land use restrictions are established for the Building 937 LUC Area and the Building 923/935 LUC Area for the following reasons:

- Sensitive use restrictions are designated because of the presence of residual COCs in soil above residential cleanup levels; and
- Cover, health and safety, soil handling, and soil reuse requirements are designated due to the general historical industrial land use and residual concentrations of COCs in soil.

The land use restrictions are described below. The groundwater use restriction in the Building 937 Groundwater Area is described at the end of this section, and shown on Figure 2.

Building 937 Area LUC Area (soil):

- Sensitive uses, such as housing, schools, playgrounds, hospitals, and day care facilities, or any other uses involving the regular and constant use by children, the infirm, or the elderly within the building and in outdoor areas are prohibited.
- The LUC Area must remain covered with buildings, pavement, or another barrier (e.g., a minimum of 18 inches of fill in LTTD areas, 24 inches in other areas, or 6 inches of fill and an engineered barrier layer) in landscaped areas that have not been previously remediated. The cover must be maintained for the entire LUC area unless, for a specific area, soil sampling shows that the representative concentrations of chemicals of concern do not exceed residential cleanup levels. Confirmation soil sampling to prove that the cover alternative is not warranted shall be no less than one sample every 25 linear feet (for sidewall sampling) and 625 square feet (for bottom sampling). The approximately 25 foot x 50 foot area north of Building 937 is currently uncovered. However, this area has been shown to meet recreational cleanup levels through remedial investigation and excavation

- sidewall sampling (Dames & Moore, 1997; International Technology Corporation, 1999). Therefore, a cover is not needed for this area.
- Soil excavated from the LUC area may be returned to its original excavation provided no chemical impact is observed (such as for trenching for utility installation). All soil excavated from areas outside of former excavation areas shown on Figure 1 (and not returned to the original excavation) shall be sampled and analyzed for a broad suite of chemicals, including metals, VOCs, polycyclic aromatic hydrocarbons, pesticides, and petroleum hydrocarbons before such soil may be reused elsewhere at the Presidio. Soil that will be disposed offsite shall be characterized based on known chemical impacts and the disposal facility's requirements. Soil can be reused elsewhere on the Presidio outside the original excavation only if chemical concentrations in the excavated soil are less than the Presidio-specific cleanup levels applicable to the receiving site (per the Cleanup Level Document) and hazardous waste criteria (California Code of Regulations, Title 22, Section 66261).
- Soil disturbance activities within the designated LUC Area must be performed according to a site-specific health and safety plan ("H&S Plan") that is consistent with applicable health and safety standards, such as 29 CFR 1910.120, unless the excavation activities are solely within the footprint and depth of previously remediated areas. Workers in the designated LUC Area shall follow the H&S Plan, must have the appropriate level of health and safety training and must use the appropriate level of personal protective equipment, as specified in the relevant H&S Plan.
- Chemically-impacted soil encountered during excavation or subsurface work shall be addressed in accordance with the technical requirements of the Trust's Petroleum Contingency Plan, dated 16 August 2004 (EKI, 2004b) in coordination with the Trust Remediation Department or its successor.
- LTTD-treated soil in the LUC Area shall be managed in accordance with the requirements of RWQCB Order No. R2-2003-0080 ("2003 Order") and the Trust's LTTD Soil Management Plan, dated 1 November 2004 (EKI, 2004a). LTTD soil shall not be placed within 50 feet of any surface water body, chemical concentrations must comply with the RWQCB Order R2-2003-0080, and excavations filled with LTTD soil shall have clean fill (no detectable fuel constituents) in the top 18 inches of the backfill.

Building 923/935 LUC Area (soil):

- Sensitive uses, such as housing, schools, playgrounds, hospitals, and day care facilities, or any other uses involving the regular and constant use by children, the infirm, or the elderly in outdoor areas are prohibited.
- The LUC Area must remain covered with buildings, pavement, or another barrier (e.g., a minimum of 18 inches of fill or 6 inches of fill and an engineered barrier layer) in landscaped areas that have not been previously remediated. The cover must be maintained for the entire LUC area unless, for a specific area, soil sampling shows that the representative concentrations of chemicals of concern do not exceed residential cleanup levels. Confirmation soil sampling to prove that the cover alternative is not warranted shall be no less than one sample every 25 linear feet (for sidewall sampling) and 625 square feet (for bottom sampling). The 3 to 10 foot wide strip along the southern side of Building 926 is currently uncovered. However, the area is limited in extent and is therefore not considered to be a significant risk to recreational receptors in the near term. The area will be covered as part of reuse of the Building 923/937 Area.
- Soil excavated from the LUC area may be returned to its original excavation provided no chemical impact is observed (such as for trenching for utility installation). All soil excavated from areas outside of former excavation areas shown on Figure 1 (and not returned to the original excavation) shall be sampled and analyzed for a broad suite of chemicals, including metals, VOCs, polycyclic aromatic hydrocarbons, pesticides, and petroleum hydrocarbons before such soil may be reused elsewhere at the Presidio. Soil that will be disposed offsite shall be characterized based on known chemical impacts and the disposal facility's requirements. Soil can be reused elsewhere on the Presidio outside the original excavation only if chemical concentrations in the excavated soil are less than the Presidio-specific cleanup levels applicable to the receiving site (per the Cleanup Level Document) and hazardous waste criteria (California Code of Regulations, Title 22, Section 66261).
- Soil disturbance activities within the designated LUC Area must be performed according to a site-specific health and safety plan ("H&S Plan") that is consistent with applicable health and safety standards, such as 29 CFR 1910.120, unless the excavation activities are solely within the footprint and depth of previously remediated areas. Workers in the designated LUC Area shall follow the H&S Plan, must have the appropriate level of health and safety training and must use the appropriate level of personal protective equipment, as specified in the relevant H&S Plan.

• Chemically-impacted soil encountered during excavation or subsurface work shall be addressed in accordance with the technical requirements of the Trust's Petroleum Contingency Plan, dated 16 August 2004 (EKI, 2004b) in coordination with the Trust Remediation Department or its successor.

Building 937 Groundwater Use Restriction Area:

• The use of Building 937 Area groundwater as a drinking water or irrigation water supply is prohibited.

5. REFERENCES

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TABLE 2 BUILDING 923/937 AREA LAND USE CONTROLS

Presidio of San Francisco, California

		Regulatory		LUCMRR Addendum Information		
Site Name	Land Use Controls	Requirement for LUC?	Coordinates of 4 Points (a)	Name	Date	File Name
	(Valid Values)		A			
Building	Sensitive Use Restrictions	Yes	Northing	Bldg 923/937	8/22/2006	Bldg
923/937 Area	Groundwater Use Restrictions	Yes	Easting	Area LUC		900s.pdf
	Health and Safety Requirements	Yes	В			
	Soil Management Requirements	Yes	Northing			
	Surface Cover Restrictions	Yes	Easting			
			С			
			Northing			
			Easting			
			D			
			Northing			
			Easting			

Notes:

(a) Provide field surveyed coordinates in Northing East UTM Meter Zone 10 North coordinates.



